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Letter dated 3 February 1999 from the Permanent Representative of Austria to the United Nations addressed to the Secretary-General

I have the honour to refer to an Expert Meeting on Renewable Energy which was hosted by the Austrian Government, the United Nations Development Programme and the European Commission and held at Vienna from 15 to 17 June 1998. The conclusions and recommendations of the Expert Meeting are summarized in the enclosed report (see annex).

I would highly appreciate it if you would arrange for the present letter and the enclosed report* to be circulated as a document of the Inter-sessional Working Group of the Commission on Sustainable Development and of the seventh session of the Commission under the respective and appropriate agenda items.

(Signed) Ernst Sucharipa
Ambassador
Permanent Representative of
Austria to the United Nations

* The report is circulated in the language of submission only.



Annex

CHAIR'S SUMMARY

EXPERT MEETING ON RENEWABLE ENERGY

Vienna, 15-17 June 1998

On 15-17 June 1998, an Expert Meeting on Renewable Energy, hosted by the Austrian Government, The United Nations Development Programme, and the European Commission (DG VIII) was held in Vienna. The meeting was convened and chaired by Ambassador Irene Freudenschuss-Reichl, Permanent Representative of Austria to the United Nations in Vienna. Dean Abrahamson, Professor emeritus, University of Minnesota, acted as Rapporteur. Some 150 experts from all regions of the globe and from relevant international organisations participated in the meeting.

1. Objectives

The Workshop objectives included:

- To follow-up on the recommendations of the 19th Special Session of the UN General Assembly (UNGASS) on energy (paras. 42 - 46 of the Programme for the Further Implementation of Agenda 21);
- To exchange views and elaborate recommendations related to the promotion of renewable energy as one component of an overall framework for a sustainable energy future as recommended by the 19th UNGASS;
- To provide substantive input into the deliberations of the open-ended intergovernmental group of experts on energy and sustainable development, created by the 19th UNGASS, which is to start its work at the 7th regular session of the Commission on Sustainable Development (CSD) in 1999 and will meet in conjunction with the meetings of the CSD in 2000 and in 2001;
- To identify areas where further research would be needed in order to enable appropriately informed action.

2. Background

Agenda 21 highlights the importance of energy: *Energy is essential to economic and social development and improved quality of life. Much of the world's energy, however, is currently produced and consumed in ways that could not be sustained if technology were to remain constant and if overall quantities were to increase substantially. The need to control atmosphere emissions of greenhouse and other gases and substances will increasingly need to be based on efficiency in energy production, transmission, distribution, and consumption, and on growing reliance on environmentally sound energy systems, particularly new and renewable sources of energy.*

Energy is of paramount importance in the quest for sustainable development in developing and industrialized countries. The availability of modern energy carriers is essential to reduction of poverty, and to social and economic development. Two billion people are cooking with traditional fuels. More than 1.5 billion people have no access to electricity. Hundreds of million women spend hours a day carrying fuel wood and water. Local issues – water, food, energy availability; health, housing and education provision; and potentially local and regional pollution - are the highest immediate priorities for most people.

Local, regional, and global environmental considerations are increasingly informing energy policy. Conventional energy supply is responsible for a large fraction of urban air pollution, acid precipitation, heavy metal contamination of air, water, and soils, and oil flows to oceans. Traditional household fuels are responsible for indoor air pollution and adverse health effects.

Limiting greenhouse-gas induced climate change could prove to be among the most serious environmental challenges facing industrial and non-industrial countries alike. The United Nations General Assembly established the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change (FCCC) in 1990. The FCCC was adopted in 1992. With the Kyoto Protocol, adopted at the Third Conference of the Parties in Kyoto, December 1997, the climate regime has developed a significant step further. The ultimate aim of the FCCC is to stabilize greenhouse gas concentrations at a level that would prevent dangerous anthropogenic interference with the climate system (a level which has still to be determined). This may require decarbonization of the world energy system by approximately a factor of ten.

3. Entry Points for Changing the World Energy System to meet Socio-economic and Environmental Concerns

Further restructuring of the global energy system is needed, taking into account realistic lead times and economics. The development and deployment of renewable energy sources is one essential course towards sustainable development. Renewable energy utilization is driven mainly by socio-economic

development concerns in developing countries and mainly by environmental concerns, primarily climate change, in industrial countries. In the economies in transition renewal of traditional energy systems with much more efficient technology is probably the highest priority.

The options for developing a new energy path are:

- More efficient use of energy and materials, in particular energy-intensive materials (dematerialization);
- Increasing the use of renewable sources of energy (decarbonization);
- More efficient production and use of fossil fuels; and,
- Fuel substitution to achieve decarbonization.

This Expert Meeting primarily addressed the renewable energy option. Renewable energy sources result in the emission of no, or little, carbon dioxide and hence their accelerated expansion is an important component of climate change mitigation. Additional benefits of renewable energy, benefits not currently reflected in national income accounts, include:

- 1) Social and economic development and employment opportunities;
- 2) Reduced conventional air pollution;
- 3) Increasing fuel supply diversity;
- 4) Locally appropriate and available energy resource use;
- 5) Increasing local energy supply security.

4. Renewable Energy

There is large technical and economic potential for raising energy efficiency and promoting renewable energy. Major studies have concluded that given adequate support, renewable energy technologies can meet much of the growing demand.

By the middle of the 21st century, renewable energy sources could account for three-fifths of the world's electricity market and two-fifths of the market for fuels used directly.

Renewable energy technologies are maturing rapidly and some States are making significant efforts to increase renewable energy use.

Rapidly, a world market for renewable energy technologies is developing, a market which now has a volume of several billions of US dollars a year. At the end of 1997, the total installed wind capacity in the world amounted to 7030 MW, with the largest growth taking place in Europe. The annual worldwide installation rate is now more than 1600 MW/year. Costs continue to fall. In the area of photovoltaics (PV) the worldwide module shipments in 1997 increased to 125 MWp, compared to 90 MWp in 1996. Several multi-national companies have announced plans for investments in new manufacturing capacity, totally more than 250 MWp, to be realized in or before the year 2000.

The geothermal energy electricity production installed capacity has been 11.000

MWe and shall reach 16.000 MWe in 2000 and the thermal one has been 12.500 MWt to reach 20.000 MWt in 2000 which means annual increase of 1 000 and 1 500 MW /year.

5. Obstacles

Renewable energy characteristics are quite different from those of conventional energy, yet renewable energy technologies have been forced to compete within complex financial, regulatory, subsidy, and tax systems which evolved over a century to facilitate expansion of conventional energy sources. Established energy utilities often have monopolies on generation, transmission, distribution and sales. Renewable energy technologies have often been expected to deliver energy services with little attention paid to links with either the centralized or the traditional energy systems. The process of liberalisation now taking place in many countries needs to take account of access for renewables. There are price distortions adversely affecting renewables, and limited information is often available on the renewable resource base.

Market barriers and market failures have thwarted renewable energy technology development, such as:

- High capital costs;
- Incomplete information;
- High transaction costs;
- Deployment of new technology which involves risk;
- Excessive and costly regulations;
- Import duties;
- No credit is usually given for avoiding the environmental, health, and social external costs imposed by conventional energy sources;
- Refusal by utilities to purchase electricity at an adequate contractual price.

There are further obstacles, especially legal, administrative and institutional.

6. Recommendations

Energy services are essential for achieving the social, environmental, and economic objectives of sustainable development. In order to achieve these and other objectives agreed upon at a series of UN conferences, a number of measures are required.

Many obstacles currently encountered can be overcome by improvements in technology and through institutional changes provided that sufficient societal commitment to the transition to energy systems more supportive of sustainable development can be achieved. Mechanisms for renewable energy finance must recognize that renewable energy is an interdependent part of the development

process; requires broad institutional groundwork; depends on a deliberate framework supporting market and investment growth; continues to need concessional finance, including grant support; seeks to mobilize available capital, including domestic savings in developing countries.

A strong individual governmental and international commitment is needed to underwrite and enhance national and regional programs for increasing the use of renewable energy technologies. The action-oriented World Solar Programme 1996 - 2005 is one reflection of such a commitment.

6.1. NATIONAL LEVEL

At the national level, renewable energy policy development would benefit from the following:

1. National and regional sustainable energy assessments, including environmental and social aspects of energy use, should be undertaken including establishment of goals and schedules for deployment of renewable energy supply and policies for realization of these goals and schedules.
2. The price of energy should reflect full costs, including environmental and health externality costs. This should be supported by reform of trade policies and agreements, wherever necessary.
3. A judicious mixture of markets, economic instruments, regulations and standards is likely to achieve the best results.
4. Public funding for key new renewable energy technologies could be very effective in supporting multiple energy policy goals. Such public funding should be reduced or phased out as the technologies mature, price distortions are reduced and an enabling environment for private funding is created. Joint ventures between public and private investors should be encouraged. Mobilization of private funds is a critical long-term need.
5. Tax exemption or reduction, and favorable depreciation schedules should be developed to encourage renewable energy production. Tax and tariff distortions that discourage renewable energies should be removed.
6. Renewable energy must be given equal access to transmission and distribution networks, especially for electricity, including through regulation.
7. Food, fiber, and biofuels policies should be coordinated as biofuels become increasingly important; increasingly compete for land and water with agriculture and conventional forest products sectors; and may threaten biodiversity. Natural resource policies management by local communities should be encouraged.

8. A major increase in support for renewable energy research and development, including technology transfer adapted to local circumstances as well as support for renewable energy technology diffusion is required, especially to rural areas of developing countries.
9. Temporary subsidies for the building of initial markets for new renewable energy and efficiency technologies to help bring costs of these new technologies down the learning curve.
10. Local entrepreneurs, who would add value to imported technologies, should be encouraged and supported.
11. The build-up of capacity for indigenous production, after-sales service, general maintenance of new renewable energy systems and intra-regional cooperation and trade should be encouraged.
12. Institutional frameworks which ensure that different policies and measures are coordinated to achieve consistency should be enhanced.
13. Education, awareness raising, promotion in the field of renewable energies should be strengthened at all levels.
14. Initiatives to jumpstart a dynamic bottom-to-top-process associating all relevant stakeholders should be promoted.
15. Implement disclosure and other mechanisms that ensure the customers the choice of renewable or sustainable energy sources.

6. 2. INTERNATIONAL LEVEL

At the international level there is need for various functions to be fulfilled, including:

1. Raising the awareness, from end-users to decision-makers at the highest levels, of opportunities for sustainable development utilizing renewable energy supply;
2. Providing mechanisms for the regular exchange of information on renewable energy development, and on policies and actions which are shown to be effective in overcoming the barriers to implementation of renewable energy and energy efficiency improvement at the national, sub-regional and regional levels;
3. Identifying the most pressing renewable energy research needs and sources of support for such research;

4. Encouraging or redirecting trade and investment flows preferentially into cleaner energy technologies and financing of appropriate renewable energy systems to serve remote rural areas;
5. Inviting the international financial institutions to devote more attention and resources to renewable energy issues and establishing regular reporting and monitoring mechanisms for the performance of such institutions.

6.3. ACTIVITIES THAT MIGHT BE USEFUL IN SUPPORTING THE CSD-9 PROCESS INCLUDE

Studies

A review should be undertaken to establish if and how the functions at the international level, identified above, can be done within the framework of existing institutions.

A comprehensive analysis should examine how intergovernmental agreements and institutions may best realize the potential benefits afforded by the transition to a more efficient and less carbonized energy systems. Such an analysis might include assessments of

- the potential land-use conflicts between production of food, conventional forest products, and biomass for energy;
- the environmental compatibility of the new energy developments;
- job creation potentials in the field of renewables;
- incentives for the promotion of renewable energy technologies and end-use efficiency;
- methodologies to internalize external costs and benefits of renewable energy supply and of increasing efficiency, and staged introduction of internalized values and would take into account the special needs of countries that are highly dependent on income generated from the production, processing, and export of fossil fuels; that have serious difficulties in switching to alternative sources of energy; or that are highly vulnerable to adverse effects of climate change, taking note that when rapid population growth and urbanization are occurring environmental issues are likely to rise up in the political agenda.

Other activities

Effective partnerships between governments at all levels, energy utilities, energy

industries, financial institutions, market intermediaries, consumers, and non-governmental organizations should be developed and encouraged. Fora to enhance such effective partnerships should be created, where they do not yet exist, or enhanced, as appropriate. Actions that are taken by the various stakeholders in the various sectors, such as industry, agriculture, transport, etc. already now should be promoted and publicized. The involvement of the local level is of paramount importance.



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Letter dated 16 February 1999 from the Permanent Representative of the United Kingdom of Great Britain and Northern Ireland to the United Nations addressed to the Secretary-General

My Brazilian colleague and I have the honour to transmit to you the report of the Second London Oceans Workshop, which was hosted jointly by the Governments of Brazil and the United Kingdom from 10 to 12 December 1998 (see annex).

The Workshop was held as a contribution to the preparatory work for this year's consideration of the oceans and seas by the Commission on Sustainable Development. Its main theme was how to develop an integrated approach to the management of the oceans. It identified a number of existing and potential problems for the conservation and sustainable management of oceans and suggested action which could be taken to address them.

The Workshop was chaired jointly by Laudo Bernardes, Brazilian Deputy Minister of the Environment and Alan Meale, United Kingdom Parliamentary Under-Secretary of State for the Environment. It was attended by representatives of 40 national Governments from all geographical regions, 14 intergovernmental organizations and 14 non-governmental organizations.

I should be grateful if you could have the text of this letter and the report of the Workshop circulated as a document of the seventh session of the Commission on Sustainable Development.

(Signed) Jeremy Greenstock



Annex

**SECOND LONDON OCEANS WORKSHOP
10-12 DECEMBER 1998**

REPORT BY THE CO-CHAIRMEN

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SECOND LONDON OCEANS WORKSHOP 10 - 12 DECEMBER 1998

REPORT BY THE CO-CHAIRMEN

PROCESS OF THE WORKSHOP

- I. An international workshop on oceans questions was held in London from 10th to 12th December 1998.
- II. It was attended by representatives nominated by 40 national governments and by 14 international agencies. It was also attended by representatives nominated by 14 non-governmental organisations. A list of those who attended is at Annex A.
- III. The workshop was chaired jointly by Dr Laudo Bernardes, Deputy Minister for the Environment, Brazil, and Mr Alan Meale, MP, Parliamentary Under-Secretary of State, Department of the Environment, Transport and the Regions, United Kingdom.
- IV. On the first day, after introductory statements by the Co-Chairmen, the keynote address was given by the Rt Hon John Prescott, MP, the United Kingdom Deputy Prime Minister and Secretary of State for the Environment, Transport and the Regions. A copy of this address is at Annex B. This was followed by two keynote papers, "*Policy integration in oceans management: are we advancing?*" by Dr Meryl Williams (Director General, International Centre for Living Aquatic Resources Management, Philippines) and "*How, in accordance with the conclusions of CSD VI, can we best generate, share and utilise science for improving marine environment policy in different fields and in integrating those fields?*" by Dr Gilberto Gallopin (Director, Systems for Sustainable Development Programme, Stockholm Environment Institute). These were followed by a report from Sir Hugh Rossi (Vice President UK of the Advisory Committee on the Protection of the Sea) on the Cape Town Conference of 30 November - 4 December 1998 and then by general discussion.
- V. On the second day, after an address to the plenary by the Honourable Simon Upton, Minister for Environment, New Zealand, and Chairman of the United Nations Commission on Sustainable Development (CSD), the workshop divided into three parallel discussion panels to consider issues concerning the coastal zone, the wider seas and observation and scientific advice. The three panels were chaired by Mr Rafael Lotilla (Philippines Council for Sustainable Development), Mr Edwin Barnes (Ministry of Environment, Science and Technology, Ghana) and Lord Clinton-Davis (Advisory Committee on the Protection of the Sea). Mr Thomas Laughlin (National Oceanic and Atmospheric Administration, USA), Ms Gabrielle Rush (New Zealand High Commission, London) and Mr Ramate Sukpum (Ministry of Science, Technology and Environment, Thailand) acted respectively as rapporteurs to the panels.
- VI. The reports of these three panels are attached at Annexes C, D and E.

CONCLUSIONS

1. The theme of the workshop has been integration. For convenience, we have looked separately at the coastal zone and the wider seas, but we emphasise that these are merely separate aspects of the same set of problems. We have to find solutions which will address them together.
2. We have attempted to identify concrete actions that could be taken by governments and by international organisations that will help to produce integrated solutions. But we start by restating some important background propositions which set the framework within which we have to work.

BACKGROUND

3. The oceans present a complex web of issues. For example, we cannot hope to solve problems in relation to fishing without considering the impact of land-based pollution; we cannot consider the protection of species or habitats without considering fishing, shipping and land-based pollution. Action in one field must be integrated with that in other related fields.
4. We do not start with a blank sheet. For the past century or more, states have been trying to find ways of managing mankind's increasing impact on the seas. The result is a complex jigsaw of measures, institutions and practices. Not all the international agreements reached have yet been implemented. We must work to make the best use of the arrangements we have. We cannot allow ourselves the luxury of considering what we might do if we had a free hand. But we must allow for the gaps in our current knowledge.
5. Achieving the necessary changes is not a task for government alone. It will require partnerships at national, regional and global levels and wide involvement of stakeholders. Different states have differing requirements; the circumstances and needs of developing states, including small island developing states, must be taken into account in all actions in this field.

GENERAL CONTEXT

6. The UN Convention on the Law of the Sea (UNCLOS) represents a major achievement and provides the sound, comprehensive basis for work in this field. States should take care that their activities do not undermine this foundation. Within this framework, states have the right to manage their interests in their territorial waters and exclusive economic zones. UNCLOS also lays down many clear requirements which serve to support the conservation and sustainable use of the seas and with which states must comply. There is a general need to help states, especially developing states, to make the best long-term use of their marine resources.

7. Against this background, it is clear that the two major problems are:

- a. over-fishing and other unsustainable fishing practices; and
- b. pollution and other degradation from land-based activities.

Other problems arise from shipping, off-shore minerals exploitation, coastal development, dumping of waste and climate change. The actions needed to help address these problems are best considered in the national, regional and global contexts.

NATIONAL CONTEXT

8. In the national context and taking into account the special needs of developing countries, especially of small island developing states, governments should be called upon to consider:

- a. the social, economic and environmental values of coastal and marine ecosystems;

- b. how to achieve the integrated approach to the management of coastal and marine matters called for by Programme Area A of Chapter 17 of Agenda 21. Marine protected areas can be an important part of such an integrated approach. Another significant element can be ensuring consistent approaches in different international forums, in particular, Ministers responsible for agriculture, energy, fisheries and sea transport need to be involved in such an integrated approach to the marine environment;
 - c. how to join in and fully apply the international agreements that have been developed to deal with regional and global problems; and
 - d. how to report periodically on the states of their seas.
9. In order to create effective support for the development of integrated coastal and marine management programmes:
- a. governments have a role in bringing together all stakeholders at a national level;
 - b. international organisations and the donor community should consider on a national or regional basis how to bring together their various activities in capacity building and the provision of financial, human and technological resources; and
 - c. partnership conferences, when thoroughly prepared, can assist in mobilising internal and external support.
10. The international agencies concerned with the various international agreements already negotiated should consider:
- a. what is hindering the wider acceptance and application of each of these agreements and what can be done to remove these obstacles; and
 - b. what common problems these analyses reveal and what can be done to solve them.

REGIONAL CONTEXT

11. It is at the regional level that international co-operation on promoting the conservation and sustainable use of the seas is most needed. This implies revitalising the Regional Seas Programme. Because of the need for integration, all global agencies should consider how their relevant regional activities can be brought together with those of Regional Seas Programmes. In pursuing its reorganisation, the United Nations Environment Programme (UNEP) should ensure that there is a clear focus for the tasks related to the Regional Seas Programme.

Fisheries problems

12. Through regional fisheries conservation and management organisations, states need to adopt clear targets to ensure that catches do not exceed sustainable levels. This requires the application of the principles underlying the UN Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks and the Code of Conduct for Responsible Fisheries, including the precautionary approach and the ecosystem approach. Steps are also needed to rationalise subsidies. Clear indicators, based on scientific evidence, are needed to underpin fisheries management systems and to alert the public to the effects of overfishing. Appropriate measures, consistent with international law, may also be needed in the supply chain downstream from the catching phase. Attention should also be paid to enforcement action against illegal fishing and to unregulated fishing on the high seas.

Problems from land-based activities

13. Integrated coastal zone management is needed to resolve many of the problems that affect the seas from the land. Management measures beyond the coastal zone also need to be consistent with such an integrated approach in the coastal zone. For all this the 1995 Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities (GPA) provides a framework (see paragraph 17). Regional discussion of what works and what does not will help states find ways to set up such integrated management programmes. However, we also need a co-ordinated approach between the various agencies that are trying to promote integrated coastal and marine management, so that an effective package of support emerges for states that want it. Regional bodies have an important role to play in this and partnership conferences may also be important.

14. Integrated management programmes need to be built upon a sound basis of knowledge of what is happening in the seas and an understanding of the processes involved and their social and economic impacts. Creation of integrated coastal zone management programmes therefore needs to include provision of adequate scientific education, collection of data and creation of dialogue between scientists, policy makers and other stakeholders. Again, regional collaboration can help develop the tools necessary to achieve this.

Other problems

15. Regional organisations need to pay more attention to enforcement of global and regional arrangements. For shipping, the further development of regional port-state control networks should be considered and supported by the relevant international organisations.

GLOBAL CONTEXT

Fisheries problems

16. Immediate steps should be taken by states to bring into force and implement in a timely manner the UN Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks and the Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas. Effective application of the Code of Conduct for Responsible Fisheries is also crucial. To complement these steps, the work in hand under Food and Agriculture Organisation (FAO) programmes and the work called for by the 1998 resolution of the UN General Assembly on oceans affairs and the law of the sea should be carried through to an early conclusion. This includes such topics as excessive levels of catch, reduction of discards, conservation of seabirds, bycatch of non-target species, and drift-net fisheries on the high seas.

Problems from land-based activities

17. It is essential to revitalise the GPA. This requires early establishment of the GPA clearing-house mechanism. It would also be assisted by an early start of the work of a GPA Steering Committee, either through work by or under the Administrative Co-ordination Committee (ACC) Sub-committee on Oceans and Coastal Areas or by a new specific committee. Provision should also be made in the work of the GPA Steering Committee for participation of a representative group of governments.

Other problems

18. New initiatives are needed to follow up the success of the Noordwijk Workshop (International Expert Meeting: Environmental practices in offshore oil and gas activities, 17-20 November 1997) on the environmental management of offshore oil and gas. These need to focus on guidelines for satisfactory environmental management systems and the regional environmental goals that such systems should aim to achieve.

19. Work in hand in the various international organisations must be pursued on, *inter alia*, transport of alien species in ballast water, port waste-reception facilities, substitutes for organotin anti-fouling treatments, endocrine disruptors, carriage of chemicals, hazardous and noxious ships cargoes, regulation of shipping fleets, quality shipping registers and persistent organic pollutants.

Integration and scientific advice

20. Because of the numbers of different international organisations involved, improved arrangements are needed for co-ordination in order to produce an integrated overview and generate consistent approaches in the various forums to the conservation and sustainable use of the seas. The UN General Assembly should be invited to consider how the annual debate on oceans affairs and the law of the sea can be broadened and better prepared for this purpose. Among the possibilities are more effective use of the annual report by the Secretary General, a Standing Committee on the Oceans (parallel to that on Outer Space) or some less formal preparatory mechanism. Preparation for the debate needs to be based on a review of problems identified at national, regional and global levels and consideration of priorities and means for addressing them.

21. As recommended by CSDIV in 1996, the Group of Experts on Scientific Aspects of Marine Protection (GESAMP) should be made more inclusive and means should be found for considering the economic and social aspects of the questions examined by GESAMP.

List of Delegates

Workshop Co-Chairmen

Dr Laudo Bernardes
Mr Alan Meale MP

Deputy Minister, Ministry of the Environment, Water Resources and the Legal Amazon, Brazil
Parliamentary Under Secretary of State for the Environment, Department of the Environment, Transport and the Regions (DETR) UK

Panel Chairmen and Rapporteurs

Panel 1: The Coastal Zone

Chairman

Mr Rafael Lotilla

Philippine Council for Sustainable Development, Philippines

Rapporteur

Mr Thomas Laughlin

National Oceanic and Atmospheric Administration, USA

Panel 2: The Wider Seas

Chairman

Mr Edwin Barnes

Ministry of Environment, Science and Technology, Ghana

Rapporteur

Ms Gabrielle Rush

New Zealand High Commission, London

Panel 3: Observation and Scientific Advice

Chairman

Lord Clinton-Davis

Advisory Committee on Protection of the Sea (ACOPS), UK

Rapporteur

Mr Ramate Sukpum

Ministry of Science, Technology and Environment, Thailand

Speakers

The Rt Hon John Prescott MP
The Hon Simon Upton
Dr Meryl Williams
Dr Gilberto Gallopin
Mr Franklin McDonald
The Hon Silas Charles Hakwa
Mr Oleg Khalimonov
Mr Magnús Jóhannesson
Mr Sebastian Mathew
Dr Walter de Sá Leitão
Mr Atle Fretheim
Dr Stanley Wilson
Dr Patricio Bernal

Deputy Prime Minister and Secretary of State for the Environment Transport and the Regions, UK
Minister for the Environment, New Zealand and Chairman of CSD
International Centre for Living Aquatic Resources Management, Philippines
Stockholm Environment Institute, Sweden
Natural Resources Conservation Authority, Jamaica
Minister for Lands, Geology, Mines, Energy, Environment and Water Resources, Vanuatu
International Maritime Organisation (IMO)
Ministry for the Environment, Iceland
International Collective in Support of Fishworkers (ICSF), India
PETROBRAS, Brazil
Ministry of Environment, Norway
National Oceanic and Atmospheric Administration, USA
Intergovernmental Oceanographic Commission (IOC)

National Representatives

Dr Ramiro Sanchez
Mr Ricardo Arredondo
Mr Phil Burgess
Dr Ian McPhail
Mr Michael Kyramarios
Ambassador Rubens A Barbosa
Mr Sergio Moreira Lima
Capitan Wilson Silva da Rocha
Ms Raquel Breda dos Santos
Mrs Eliana Zugaib
Mr Robson Jose Calixto
Mr Scott Parsons
Ms Kathryn Bruce
Mr Richard D Ballhorn

Fisheries Investigation and Development Institute, Argentina
First Secretary, Embassy of Argentina
Environment Australia
Environment Australia
UGMM- BMM, Belgium
Embassy of Brazil
Minister Counsellor, Embassy of Brazil
Maritime Issues Division, Brazil
Ministry of Environment, Water Resources and the Legal Amazon, Brazil
Embassy of Brazil
Ministry of Environment, Water Resources and the Legal Amazon, Brazil
Department of Fisheries and Oceans, Canada
Department of Fisheries and Oceans, Canada
International Environmental Affairs Bureau, Canada

Mr John Karau	Environment Canada
Mr Rolando F Ortega	Embassy of Chile
Mme Zhang Xiao'an,	Ministry of Foreign Affairs, China
Mr Chen Yue	State Oceans Administration, China
Mr Amr El Sherbiny	Ministry of Foreign Affairs, Egypt
Dr Moustafa Moktar Fouda	Environmental Affairs Agency, Egypt
Mr Patrick Rabe	DGXI, European Commission
Mr Jaime Peres Vidal	DGXIV, European Commission
Mr Silvio Funtowicz	Joint Research Centre, Institute for Systems, Informatics and Safety, EC
Mr Uwe Hesse	Council Secretariat, European Union
Mme Genevieve Besse	Ministry of Foreign Affairs, France
Mr Jean-Paul Rivaud	Ministry of Environment, France
Dr Jutta Maria Schlamm	Federal Ministry for the Environment, Germany
Mr Joachim Stietech	Federal Ministry for the Environment, Germany
Dr W Hirdes	Federal Ministry for Economic Co-operation and Development, Germany
Cdr Stavros Michailidis	Embassy of Greece, Greece
Ms Denise Fraser	Environment Protection Agency, Guyana
Ambassador Eidur Gudnason	Ministry of Foreign Affairs, Iceland
Mr Halldor Thorgeirsson	Ministry of Environment, Iceland
Dr Hasjin Djalal	Department of Foreign Affairs, Indonesia
Mr Gearoid O'Keefe	Department of the Marine and Natural Resources, Ireland
Mr Thomas Tobin	Department of the Marine and Natural Resources, Ireland
Mr Eugene Nixon	Fisheries Research Centre, Ireland
Dr G Notarbartolo di Sciara	Central Institute for the Scientific and Technological Research Applied to the Sea (ICRAM), Italy
Ms Giulia Mo	ICRAM, Italy
Mr Tomohiro Shishime	Environment Agency, Japan
Mr Kiyoshi Katsuyama	Fishery Agency, Japan
Mr Asraf Ally Caunhye	Acting Parliamentary Counsel, Mauritius
Mr S Chuckowree	Mauritian High Commission
Sra Mara Munillo	Ministry of the Environment, Mexico
Ms Paola Maria y Campos	Embassy of Mexico
Rr Adm Jorge A Maldonado	Naval Attaché, Embassy of Mexico
Mr Geraldo Saranga	Mozambique High Commission
Mr Robert Dekker	Ministry of Transport, Public Work and Water Management, Netherlands
Mr Bill Mansfield	CSD Adviser, New Zealand
Mr Simon Draper	Ministry of Foreign Affairs and Trade Adviser, New Zealand
Dra Esperanza Cuan Acosta	Ministry for External Relations, Nicaragua
Mr Johan Williams	Ministry of Fisheries, Norway
Ms Anne Marie Skjold	Ministry of Foreign Affairs, Norway
Mr Olga Bosquez-Poueda	Ambassador to the International Maritime Organisation, Panama
Mr Rogelio Villanueva	Ministry of Foreign Affairs, Peru
Sra Luz Caballero de Clulow	Embassy of Peru
Ms Margaret Wasilewska	Maritime Institute, Poland
Ms Iwona Szalucka	Maritime Institute, Poland
Professor Doutor Mario Ruivo	Council for Environment and Sustainable Development, Portugal
Professor Maria Joao Bebianio	University of the Algarve, Portugal
Mr Ki-hoon Chin	Embassy of the Republic of Korea
Mr Young Dae Jeong	Embassy of the Republic of Korea
Mr Andrei Terentiyev	Commission of Environment Protection, Russian Federation
Ambassador Neroni Slade	Permanent Representative to the United Nations, Samoa
Mr Ashley Johnson	Sea Fisheries Research Institute, Cape Town, South Africa
Sr Victor Escobar Paredes	Ministry of Environment, Spain
Mr Anders Bertell	Ministry of the Environment, Sweden
Mrs Viveka Bohn	Ministry of the Environment, Sweden
Mr Rolf Akesson	Ministry of Agriculture, Sweden
Mr Tucker Scully	Office of Ocean Affairs, Department of State, USA
Mr Charles Ehler	National Oceanic and Atmospheric Administration, USA
Mr Stanley Temakon	Ministry of Lands, Geology, Mines, Energy, Environment and Water Resources, Vanuatu
Ms Helen Brinton, MP	Environmental Audit Committee, UK
Dr Helen Browning	British Government Panel on Sustainable Development
Sir John Houghton	British Government Panel on Sustainable Development
Miss Dinah Nichols CB	Director General, Environmental Protection, DETR, UK
Mr Alan Simcock	DETR, UK
Dr Alan Apling	DETR, UK
Mrs Theresa Crossley	DETR, UK
Mr John Wren	DETR, UK
Mr Simon Toole	Department of Trade and Industry, UK

Mr David Jones
Dr Joe Horwood
Mr Malcolm Whatley
Mr Andrew Jackson
Dr John Tarbit
Mr John Carpenter
Dr David Pugh
Mr David Simmons

Ministry of Agriculture, Fisheries and Food, UK
Centre for Environment, Fisheries & Aquaculture Science, UK
Foreign and Commonwealth Office, UK
Foreign and Commonwealth Office, UK
Department for International Development, UK
Department for International Development, UK
Inter-Agency Committee on Marine Science and Technology, UK
Joint Nature Conservation Committee, UK

Intergovernmental Agencies

Ms Idrani Lutchman
Dr Siyan Malomo
Dr Salvatore Arico
Professor Chris Hopkins
Dr Charlotte de Fontaubert
Dr Ray Gambell
Mr Philip Reynolds
Mr Leo de Vrees
Ms Anne Rogers
Ms Gabriele Gottsche-Wanli
Mr Johannes Guddal
Mr Ben van de Wetering

Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)
Commonwealth Secretariat
Convention on Biological Diversity (CBD)
International Council for the Exploration of the Sea (ICES)
International Union for the Conservation of Nature and Natural Resources (IUCN)
International Whaling Commission (IWC)
UN Development Programme (UNDP)
UN Environment Programme (UNEP)
UN Secretariat - Department for Economic and Social Affairs (CSD Secretariat)
UN Secretariat - Division for Ocean Affairs and Law of the Sea
World Meteorological Organisation (WMO)
OSPAR Secretariat

Non-Governmental Organisations

Sir Hugh Rossi KCMG
Dr Euan Dunn
Dr John Campbell
Ms Betsy Dribben
Mr Remi Parmentier
Mr Peter C van der Kluft
Captain J M Joyce
Dr Gunnar Kullenberg
Mr Tom Holmer
The Rt Hon John Gummer MP
Mr Carl-Christian Schmidt
Mr John J Maggs
Dr Arno Rothert
Ms Carole Saint-Laurent
Dr Sian Pullen

Advisory Committee on Protection of the Sea (ACOPS)
RSPB, Birdlife International
The Oil Industry International Exploration and Production Forum (E & P Forum)
Humane Society International
Greenpeace International
International Association of Ports and Harbours (IAPH)
International Chamber of Shipping (ICS)
International Ocean Institute
International Transport Workers Federation
Marine Stewardship Council
Marine Stewardship Council
Seas at Risk
Union of Industry and Employers' Confederations of Europe (UNICE)
World Wide Fund for Nature International (WWF)
World Wide Fund for Nature International (WWF)

Also in attendance:

The Rt Hon Michael Meacher MP
Mr George Foulkes MP
Sir Crispin Tickell
Dr Chris Tydeman

Minister for the Environment, UK
Parliamentary Under Secretary of State for International Development, UK
Convenor, British Government Panel on Sustainable Development
World Wide Fund for Nature International (WWF)

Annex B

KEYNOTE ADDRESS BY
THE RT HON JOHN PRESCOTT, MP,
Deputy Prime Minister
and Secretary of State for the Environment, Transport and the Regions

1. Many of you will know that the oceans are a subject dear to my heart. I earned my living for many years on board ship. And I sit in Parliament for Hull, a city with a great maritime tradition. So I have a strong personal interest in this workshop. And, of course, one of my leisure pursuits is diving.
2. Next year, the Commission on Sustainable Development will review the progress of implementing Agenda 21 for the oceans. Even the most favourable verdict on the work since 1992 is that we must try harder. More outspoken critics will be much blunter. No-one will say that the global community is managing its oceans well.
3. We need ideas for making progress in areas where the efforts of the last six years have not been good enough. A huge task faces us.
4. Recently, I launched a consultation paper on a set of indicators for sustainable development in the UK. A sort of barometer of the quality of life, ranging from populations of wild birds to air quality. We need similar barometers for sustainable use of the seas. This will help people understand what is happening. Until we get that understanding, we will not get support for the action that we need.
5. Let us take coral reefs as one of the best indicators of the quality of the marine environment. I have heard coral described by Sir Crispin Tickell, the Chairman of the UK Government Panel on Sustainable Development, as a kind of "miner's canary" - a creature on whom many coalminers depended for the first indication that something was wrong with the atmosphere in which they worked. Similarly, coral's sensitivity to increases in temperature makes it an excellent indicator of global warming. Temperature rises of only a very few degrees can cause coral bleaching on a large scale. It can also show where other things are wrong, too.
6. Not many have seen a coral reef at first hand. I was lucky enough to dive around the Great Barrier Reef last year. Most of us appreciate that they are among the most diverse places in the oceans. Yet, according to the World Conservation Union, as many as 10% of the world's coral reefs have been degraded beyond recovery. In Southeast Asia, for example, I am told that over 80% of the reefs in the region are at risk, with some 56% being at high risk.
7. Coral reefs are high points of biodiversity. But it is only quite recently that intensive scientific attention has focused on them. The pressures on them are huge. About half a billion people live within a hundred miles of a coral reef. And many such people in developing countries are poor and heavily dependent on reef resources to sustain their livelihood.
8. Earlier this year, I spoke at the conference organised by ACOPS and GLOBE in Stockholm. I stressed the seven threats to the seven seas:
 - shipping;
 - fishing;
 - run-off and discharges from land-based activities;

- dumping waste at sea;
- exploitation of sea-bed minerals;
- coastal zone development; and
- climate change.

Let us look at the effects of some of them on the world's coral reefs.

9. The reefs are attacked from land. Construction, mining, farming and logging can cause soil erosion and sedimentation. This can smother and kill the coral polyps. Pollution from run-off of pesticides and other chemicals can be just as bad.
10. The reefs can also be threatened by sea-based activities. Coral reefs are crucial to the economy in many small island states dependent on tourism. But the tourist ships can smash the reefs with their anchors, as has recently been shown in the Cayman Islands. Fish from coral reefs can be vital to the diet. 40% of animal protein in Asia comes from the sea. But destructive fishing techniques, whether with dynamite or toxic chemicals, can stop that. And ships can bring new threats in their ballast, as seems recently to have happened in the Caribbean with the disease that killed the vital sea-urchins.
11. Corals, as we know, are not just found in warm waters. Colonies of *Lophelia* grow in many areas of the cold, deep waters of the North Atlantic, even around the coast of the UK. We need to ensure that these too are not harmed by man's activities. Though fewer may see them, they can serve just the same barometer function. The UK's recent extension of Environmental Impact Assessment to cover all oil and gas drilling and development projects is an example of the care which is needed.
12. But, the problem is not just environmental. It is also economic. One estimate puts the global value of goods and services from coral reefs at about US\$375 billion every year. Clearly, degradation of these ecosystems can have far-reaching economic and social implications.
13. A report, "Reefs at Risk", was published earlier this year by a number of concerned institutions, including the World Conservation Monitoring Centre in this country. It is a first attempt to create a global indicator of future risk to the world's coral reefs. It is based upon an analysis of all the potential threats I have mentioned. It concluded that some 60% of the world's coral reefs are at medium to high risk of degradation.
14. This report was the subject of a debate in our House of Commons earlier this year. The UK was one of the founder members of the International Coral Reef Initiative. Since 1990 we have committed over £9 million of development funding to support improved understanding and better management of coral reef ecosystems. This includes our current support to the Intergovernmental Oceanographic Commission of UNESCO in its efforts to establish a Global Coral Reef Monitoring Network. UK funding is specifically targeted on the vulnerable and highly threatened reefs of the South Asia region. I know other states and organisations here are working to the same end.
15. Politicians like me need to use this kind of work as a vivid illustration of the threats to the seas and to reach a far wider audience than at present. Coral reefs are something which people need to understand, both for their own importance, and as a general barometer of what is happening to the world's oceans. With that understanding will come support for the work that is needed.
16. And work is indeed needed, and not just on coral reefs. The "seven threats to the seven seas" are worldwide. For each of them, we need to see appropriate action:

- on shipping, we need more port State control of irresponsible shipping companies;
 - on fisheries, where 60% of the world's fish resources are in danger of being over-exploited, we need effective regional agreements to encourage responsible fisheries and sustainable harvests; this is the biggest challenge that we face in dealing with the seas - not least because of its critical importance for the food of so much of the world and because of the sheer number of people involved; I am sure that much of tomorrow's discussion's will touch on this issue;
 - on dumping, more countries must be encouraged to accept the London Convention Protocol;
 - on land-based discharges, which contribute over 70% of the pollution found in the marine environment, we must ensure that the Washington 1995 Global Programme of Action is fully implemented;
 - on coastal development, we should be helping countries implement integrated coastal zone management schemes;
 - on offshore oil and gas, we need to develop environmental management systems and regional environmental goals. I was pleased to have taken part in the concluding of an agreement at the Ministerial Meeting of the Oslo and Paris Commission (OSPAR) meeting in Sintra last July, which included measures to reduce pollution of our seas, including the decision on the disposal of disused oil installations;
 - and finally, on climate change, I can only stress the vital importance of following up the international agreements that we have achieved. Especially the Kyoto agreement, where European nations played a vital part in securing the Kyoto Protocol. We have seen only too tragically, with Hurricane Mitch, how close are the links between climate, sea and land. Our sympathy goes out to all those who were affected. But we need to give practical effect to that sympathy by following up our agreements. Last month in Buenos Aires we laid out the path for following up Kyoto. We must now press ahead with that work.
17. But solving the problems of global warming is a slow job, rather like turning a supertanker. Our efforts in Kyoto and Buenos Aires will take a long time to bear fruit. Recently, I asked Sir Crispin Tickell what was the single most effective thing Governments could do *now* to halt the degradation of the coral reefs. He said that, above all, we should be taking an integrated approach to oceans management. That will not only benefit the coral reefs, but the whole of the marine environment. We take this issue seriously. For example, with the help of the Government of Jamaica, the UK co-sponsored a successful Workshop on Marine Biodiversity in the Caribbean in Montego Bay in October. The Workshop produced various conclusions, many of which address the problem of integration. I understand that you will be hearing more about this later on. And that brings me to what I understand is the main theme of this Workshop. How can we promote the integrated policy approach to the marine environment set out in Chapter 17 of Agenda 21?
18. Agenda 21 is quite clear about the need for integration at the national level. But it says nothing about how to achieve that integration at the international level. I have seen at first hand the excellent work being done by the many intergovernmental agencies and organisations active in this field. But we now need a more comprehensive approach.
19. We already have the legal framework in the UN Convention on the Law of the Sea. We also have an annual focus. The UN General Assembly decided in 1996 that the annual debate on the

Law of the Sea Convention would become a general debate on oceans affairs and the law of the sea.

20. Previously, the annual UN debate has remained too narrowly confined to legal questions. If I may say so, the issues are too important to be left just to the lawyers. I am glad that this year's resolution covers more than twenty specific issues, ranging from sustainable development to piracy and cultural heritage.
21. But it is not enough to range over a catalogue of issues. The relationships between them need to be brought out, otherwise it's a bit like counting the trees while ignoring the forest. We need to bring together economics, social questions and environmental problems as well as legal ones. We need to find a way to help the General Assembly to consider how all the pieces of the oceans jigsaw are fitting together, and who needs to do what to achieve sustainable management of our seas.
22. There are two further points that I would make.
23. First, as a basis for integrating all this work, we need to have a good scientific understanding of what is going on in the oceans. For that reason, I am glad that we have such a strong emphasis in this workshop on the development of science. And the need to apply it to decision-making and raise public awareness.
24. Secondly, we must not forget the need for integration at regional level, as well as the national and global levels. The Regional Seas Programmes have a crucial role to play.

Concluding remarks

25. So, Mr Co-Chairmen, to sum up the main thrusts of my remarks. First, we need to improve public understanding of what is happening to the seas. We need a barometer that people can understand. And one that emphasises the vital links between the seas as a major driver of our climate. The seas as a stock of biodiversity. And the seas as a central part of the world's economy and food.
26. Secondly, there is a whole series of actions where international agreement and support is needed to respond to the seven main threats from human activities to the seas. We need to revitalise co-operation in the different regional seas. We need to develop a sound scientific understanding of the processes at work in the seas. We need to apply that knowledge effectively.
27. Thirdly and most importantly, we need a single global focus for integrating global action on the oceans. A major task for CSD in 1999, and for us as we prepare for it, is to find some means to promote that international integration. I intend to press very hard for that in New York next April - I hope that many of you will join me there to see what more we can do. It is also my intention to visit, and hopefully dive around, corals in some of our regional seas, to see for myself what is really happening.
28. This afternoon, I have tried to sketch out the main actions that we need to take to manage seven-tenths of this planet - "planet water" rather than "planet earth". But you are the world's experts in this field. I hope that, over the next two days, you will come up with suggestions for taking this work forward so that it can be presented to the Commission on Sustainable Development next April. I hope that Brazil and the United Kingdom have created here the conditions in which you can work well. The late Jacques Cousteau once said to me that "the oceans are the lungs of the world"- they deserve our protection and respect. Man and the oceans *must* live in balance. We now need to make sure that we get that balance right. And I want to play my part, and ensure other politicians play their part, in making sure we get that balance right.

ANNEX C

PANEL 1 - The Coastal Zone

1 PAPERS

The four papers presented to this panel were:

- *"Where are the chief pressure points within the coastal zone, especially those on coastal ecosystems and arising from coastal and land-based activities?"*
 (a) A Caribbean Perspective : **Mr Franklin J McDonald, Executive Director, Natural Resources Conservation Authority, Jamaica**
 (b) A South Pacific Perspective : **Hon Silas Charles Hakwa, Minister for Lands, Geology, Mines, Energy, Environment and Water Resources, Vanuatu**
- *"How can international action best be focused to support local, national or regional action to deal with these pressure points?"* **Mr Oleg Khalimonov, Director of the Marine Environment Division, International Maritime Organisation**
- *"What is the current status of implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities, what are the main obstacles to its implementation and what further steps are required to overcome these obstacles?"*
Mr Magnus Johannesson, Secretary General, Ministry for the Environment, Iceland

2 ISSUES OF CONCERN

The Panel reached consensus on the following points :

Chief pressure points

2.1 It was agreed that there are two principal pressures on the coastal zone. These are :

- land-based activities, including pollution and physical (especially habitat) destruction; and
- over-fishing and other unsustainable fishing practices.

2.2 Other important issues identified included :

- shipping (pollution and alien species);
- offshore oil and gas activities;
- natural disasters; and
- ocean mining.

Suggested actions

2.3 Develop or modify integrated national and/or regional multi-sectoral action plans. [This should include consideration of climate change, biodiversity, habitat (including coral reefs), land-based pollution, integrated coastal zone management and marine protected areas, based on ecosystem approaches.]

Action Agents : national governments, regional and international organisations.

2.4 Hold national and/or regional partnership meetings to identify those potential partners which would like to support implementation of the action plans, in particular with respect to capacity building, technology transfer and financing. These meetings should be designed and conducted with

the maximum participation of potential partners. These include International Financial Institutions, the private sector, UN Organisations, non-governmental organisations (NGOs), the academic community, local governments and national foreign assistance and technical organisations. **Action Agents** : national governments, regional organisations and partners.

2.5 Actions related specifically to implementation of the 1995 Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities (GPA) include:

- strengthening Regional Seas Programmes through the formation of technical sub committees, establishing links between Regional Seas Programmes, co-operation between the GPA and other programmes, and requesting advice from the United Nations Environment Programme (UNEP) on other means of strengthening these programmes. **Action Agents** : UNEP and Regional Seas Programmes;
- rapid establishment of the global clearing-houses. **Action Agents** : UNEP and partners;
- strengthening the GPA Steering Committee through creation of a GPA-specific Administrative Co-ordination Committee (ACC) Sub-committee and providing for participation of a representative group of governments in its deliberations. **Action Agent** : Commission for Sustainable Development (CSD); and
- convene a global workshop on technical, financial and other solutions for mitigating the effects of sewage and other nutrients on the marine and coastal environment.

2.6 Actions related to fisheries include :

- reduction of overcapacity in world fisheries;
- conservation of marine living resources;
- additional assessment of the issue of subsidies;
- voluntary regional enforcement arrangements;
- protection of critical habitats; and
- creation of marine protected areas.

Actions Agents: Food and Agriculture Organisation (FAO), national governments and regional fisheries management organisations.

2.7 Actions required to foster sustainable oceans and coastal management include :

- creation of a UN Committee on Oceans which would undertake a regular review of the full range of activities related to the oceans and coastal zone. **Action Agents**: CSD, UN General Assembly;
- creation of regional monitoring and assessment programmes to provide information for decision making. **Action Agents**: Intergovernmental Oceanographic Commission (IOC), coastal Global Ocean Observance Systems (GOOS), Group of Experts on Scientific Aspects of Marine Protection (GESAMP), Global International Water Assessment (GIWA), Intergovernmental Panel on Climate Change (IPCC), partners;
- creation of basin-wide in-situ observing systems to improve understanding of the oceans and improve the ability to forecast the future state of the oceans at different time-scales. **Action Agents**: national governments and international organisations, in particular GOOS sponsoring agencies [IOC, World Meteorological Organisation (WMO), UNEP, International Council of Scientific Unions (ICSU)]; and
- creation of marine protected areas.

2.8 In carrying out the foregoing suggested actions, the special needs of developing countries, particularly of small island developing states, shall be taken into account.

ANNEX D

PANEL 2 - The Wider Seas

1 PAPERS

The three papers presented to this panel were:

- *"What are the chief pressure points arising from maritime activities, including offshore fisheries, shipping and the exploration and exploitation of sea bed minerals?"*

(a) A Non-Governmental Perspective: **Mr Sebastian Matthew, International Collective in Support of Fishworkers, India**

(b) A Brazilian Perspective: **Mr Walter de Sa Leitao, Head of the Law of the Sea and Environment Department, Petrobras, Brazil**

- *"How can we best develop an integrated approach to international action to deal with these pressure points?"* **Mr Atle Fretheim, Ministry of Environment, Norway**

2 CHIEF PRESSURE POINTS

2.1 The panel considered the chief pressure points facing the wider seas to be:

- overcapacity and unsustainable fisheries practices;
- shipping impacts;
- hydrocarbon exploration and production activities;
- exploration for and exploitation of sea bed minerals; and
- land-based sources of marine pollution.

2.2 The discussion indicated that, of these, fisheries issues were a particular concern.

3 INSTITUTIONAL ISSUES

3.1 There was general consensus that emphasis should be placed on:

- ratification and implementation of instruments;
- improving the effectiveness of institutions at all levels; and
- promoting the use of the ecosystem approach for sustainable oceans management.

The panel recognised:

- the importance of human, technological and financial resources and political will in the achievement of sustainable oceans management;
- the paramount importance of the UN Convention on the Law of the Sea (UNCLOS) as providing the framework for action in the wider seas;
- the pivotal role of national governments and regional organisations in sustainable oceans management while recognising that global issues such as persistent organic pollutants (POPs), endocrine disruptors and shipping impacts needed to be addressed at the global level; and

- the importance of the use of national and regional marine protected areas as one of a suite of measures for sustainable management of the oceans.

3.2 Specific actions :

3.2.1 The panel urged the Commission on Sustainable Development (CSD)VII to recommend to the UN General Assembly that it undertake a more effective and integrated overview of oceans issues by:

- setting aside time (perhaps a week) for consideration of oceans issues prior to the annual general debate, in order to permit full examination of the UN Secretary General's annual report on oceans and prepare draft resolutions; and
- encouraging multi-disciplinary expert attendance.

3.2.2 Governments should consider wider representation at CSDVII to include Ministers with responsibilities for marine resource issues eg fisheries, hydrocarbons etc.

3.2.3 Institutions at all levels are urged to improve linkages to:

- ensure better access to and dissemination of information;
- avoid duplication of effort; and
- encourage a co-ordinated approach.

3.2.4 Consideration should be given to how the work of the UNCLOS Secretariat could be better integrated into work of the wider international community on oceans.

3.2.5 In recalling CSDIV's observation on ratification and implementation of key marine instruments, the panel considered that further work was required at all levels :

- to identify the factors which hinder some countries from ratifying these instruments; and
- to find ways to address these factors.

3.2.6 The panel encouraged states to prepare "Status of the Oceans" reports. Recognising different institutional capacities of states, such reports should aim in time to provide quantitative data based on objective indicators and criteria. Regional and global bodies involved in oceans management issues were encouraged to assist states, where appropriate, in the preparation of these reports.

4 FISHERIES ISSUES

4.1 The panel was of the view that national and regional fisheries management bodies have a key role to play in addressing pressures arising from unsustainable fisheries practices.

4.2 Specific actions on fisheries

4.2.1 CSDVII should encourage domestic implementation of the Food and Agriculture Organisation (FAO) Code of Conduct for Responsible Fisheries.

4.2.2 FAO, in concert with the states which collect and provide the basic data, should improve the adequacy of global fisheries status reporting as follows:

- increase coverage of data;
- update data on a more frequent basis; and
- utilise consistent methodology.

4.2.3 FAO should assess and report on the impact of subsidies on overcapacity.

4.2.4 CSDVII should urge national and regional fisheries management bodies to develop measures within their respective competencies to address illegal fishing and unregulated fishing in the wider seas.

5 OFFSHORE HYDROCARBONS

5.1 In recognising the positive feedback from participants at the Noordwijk workshop (International Expert Meeting: Environmental practices in offshore oil and gas activities, 17-20 November 1997) the panel requested CSDVII to endorse the view that further meetings should be held on a regular basis. Such meetings would bring together governments, industry, regulators, non-governmental organisations (NGOs) and other interested parties for the exchange and dissemination of information.

5.2 A future topic for detailed discussion might be the principles underlying and guidance for the development and implementation of management systems. Such management systems were seen as fundamental for driving improved health, safety and environmental performance in the off-shore oil and gas industry.

6 SHIPPING

- 6.1 The panel stressed the responsibility of flag States to:

- regulate their fleets; and
- ensure the quality of their registers.

- 6.2 The panel also stressed the responsibility of States and port States to:

- minimise the risk of the introduction of harmful aquatic organisms through ships' ballast water and hull fouling; and
- reduce the threat to coastal waters and to life in the wider oceans from organotins and other persistent pollutants.

7 LAND-BASED SOURCES

7.1 The panel recognised that land-based sources of marine pollution affect the wider seas as well as the coastal zone. While Panel 1 on "The Coastal Zone" has examined these issues in more depth, Panel 2 made a general call for the 1995 Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities (GPA) to be revitalised.

PANEL 3 - Observation and Scientific Advice

1 PAPERS

The two papers presented to this panel were:

- *"Understanding the Oceans, Operational Observations and Societal Problems."*
Dr Stanley Wilson, Deputy Chief Scientist, National Oceanographic Atmospheric Administration, USA
- *"How can we Improve Support for International Action through Generating, Sharing and Utilising Scientific and Technical Advice which Integrates Economic and Social Perspectives?"*
Dr Patricio Bernal, Executive Secretary, Intergovernmental Oceanographic Commission and Assistant Director General, UNESCO

2 QUESTIONS ADDRESSED

2.1 The Panel was concerned with the contribution and development of science in relation to oceans issues. There was a very wide ranging discussion across a large number of issues and several examples were raised of good practice.

2.2 The questions addressed at greater length in the panel were:

- Do we have the right institutional mechanisms for deciding on, undertaking and disseminating science? What are the critical gaps between the information being required by policy makers and that being generated by scientists?
- How can we achieve better communication of scientific results to policy makers and the public? What processes could help to develop a shared understanding between different stakeholders?
- What is the scope for input of scientific knowledge into the international trade regime as it affects the marine environment?
- How can we improve our understanding of the marine environment? Are present ocean observations systems sufficient to address current problems and predict future ones?

3 INSTITUTIONAL MECHANISMS

3.1 All stakeholders need to be involved in decision making including scientists, governments, international organisations, industry, non-governmental organisations (NGOs) and local communities.

3.2 We should strive towards science based management and science driven by management needs.

3.3 There is duplication and overlap between existing UN agencies.

3.4 A number of suggestions about how to achieve change were raised without firm conclusions being reached. These included:

- expansion of the report on the UN Convention on the Law of the Sea (UNCLOS) at the UN General Assembly:
 - (i) for each agency to contribute in a structured and consistent manner to the report; and

- (ii) this might be followed up with a workshop involving a wider group of stakeholders to review the report on UNCLOS and prepare a critical assessment for the Secretary General in order to maintain momentum for oceans actions;
- to set up a mechanism similar to the Intergovernmental Panel on Climate Change (IPCC), either for ocean issues as a whole or for marine pollution issues only;
- to strengthen existing institutions. There may be opportunities to link with the environmental management system proposed by the UN Environmental Task Force (under Dr Töpfer).
- following the Cape Town Declaration (3-4 December 1998), consideration should be given to similar partnership procedures for other parts of the World.

4 *EXAMPLES OF GOOD PRACTICE*

4.1 Examples of good practice suggested by participants included:

- the recent initiative of the South Pacific Permanent Commission (CPPS) to bring together a wide range of national and international institutions to observe and study impacts of El Niño;
- the Global Coral Reef Monitoring Network - an ecosystem partnership;
- IPCC - as a mechanism for bridging the gap between scientists and policy makers; and
- the Global Environment Facility (GEF) initiative on strategic assessment of the ecological status of transboundary waters.

5 *COMMUNICATING THE RESULTS OF SCIENTIFIC INQUIRY*

- 5.1 Language suitable for the intended audience and interested groups is essential.
- 5.2 Integrating natural science, social science and an understanding of lifestyle changes will assist in communications. A simple vision is needed, linking environmental and economic change.
- 5.3 Wide participation is important at the stage of deciding what questions to ask.
- 5.4 Cultural values can influence the interpretation of scientific data.
- 5.5 Effective public communication of science is essential to creating the political will and the resulting financing for action on oceans issues. Support for oceans issues might be enhanced with a greater social sciences input to research.
- 5.6 There is a need for clearly communicable indicators which can be used by the public to understand environmental problems and progress with solutions.
- 5.7 Transparency and open access to scientific data are important. This is an element being developed in the Global Ocean Observation System (GOOS).

6 *RELATIONSHIP BETWEEN SCIENTIFIC KNOWLEDGE AND THE INTERNATIONAL TRADE REGIME*

- 6.1 There are conflicts between environmental and trade policies at the international level that are extremely complex to resolve. Issues about risks to health, safety and the quality of the natural

environment are important in trade and in all of these scientific advice is crucial, including in the resolution of trade disputes which arise.

7 *RECOMMENDATIONS FOR NEXT STEPS*

7.1 More routine, systematic and long-term observations are required, such as planned by the Global Oceans Observation System. Present monitoring is insufficient to address current problems at ocean, regional and local levels. The scientific skills exist to implement a global observing system spanning ocean basins and providing six month climate forecasts.

7.2 Efforts to standardise data collection and dissemination need to be encouraged and enhanced.

7.3 More monitoring of persistent pollutants is needed.

7.4 Where there is no scientific consensus, policy should be guided by the precautionary principle.

7.5 A next step relating to 'Observation and Scientific Advice' is to explore inclusive processes for sharing scientific (including social and natural scientific) advice, assessments and knowledge.
